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INVENTORY MANAGEMENT

A complete easy-to-use Inventory Management System for use with your Commodore Plus/4

Manages your inventory with computerized reporting and re-ordering

developed by **Info Designs™**

Productivity Software For Your Commodore Plus/4

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COMMODORE BUSINESS MACHINES

COMMODORE BUSINESS ACCOUNTING SYSTEM

FOR THE COMMODORE PLUS/4

INVENTORY MANAGEMENT OPERATOR'S GUIDE

Version 1.0

For the Commodore PLUS/4 Computer

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I. INTRODUCTION

A. Overview

The Commodore BAS PLUS/4 Inventory Management System is an extremely powerful inventory management system adapted from larger sophisticated systems and implemented on the revolutionary Commodore PLUS/4 microcomputer system.

The system utilizes a set of floppy disks to perform the fundamental inventory control functions. The programs reside on one disk, and inventory file resides on the other.

The exact capacity configuration, is as follows:

Maximum Records Storage Capacity(per disk)

	CBM 1541
Inventory Items	1800

The system provides these advanced capabilities:

- Maintains perpetual inventory records for all stock items
- Processes stock receipts, stock issues, stock orders, and stock adjustments with full audit trail
- Utilizes scientific inventory management principles
- Automatically calculates daily usage, re-order levels, and economic order quantities
- Provides "real-time" updating of inventory file balances for current management information
- Maintains average cost automatically, and up to 3 retail prices including price break formula
- Provides comprehensive management reporting, including: Inventory Summary, Re-Order Report, Shortage Report, Stock Status Report, Physical Inventory Report, Price Catalog, Sales Analysis Report, etc.

The Inventory Management System is part of a total Business Accounting System which includes an Accounts Receivable Module, Accounts Payable Module, Payroll Module and General Ledger Module. The overall system has been designed to allow an automated interface between specific modules when installed. However, each module can be implemented and operated independently of the others until such time as you decide to incorporate automated interface into your operation.

The balance of this manual contains information essential to the smooth conversion and ongoing effectiveness of the Inventory Management application, including:

- System Conventions, which highlights key technical and operating characteristics of the BAS PLUS/4 application that are used to provide consistency of operation across all Commodore applications (See Section I-B)

- Inventory Management Overview, which describes the underlying theory and scientific principles of inventory management that are used by the system (See Section II)

- System Functions, which describes the purpose, timing and features of the critical accounting functions performed by the application (See Section III)

- System Start-Up, which provides guidelines on how to initialize your equipment and files to prepare for day to day operations (See Section IV)

- Inventory Management Procedures, which outlines the operating guidelines to be followed during the conversion of your existing inventory records, as well as performing daily, and monthly inventory management activities (See Section V)

- Management Reports, which describes the purpose, timing, execution and format of those reports/documents produced by the system to control your operation (See Section VI)

- Troubleshooting Guide, which describes particular error conditions, their probable cause and required action to resolve the errors that may occur in day to day processing (See Section VII)

- Using Telephone Consulting Assistance, which describes the optional Telephone Consulting Assistance program provided by the Commodore BAS Support Center, and quidelines for placing orders for additional product and services.

These and remaining sections of the Operator's Guide will significantly contribute to the future success of your operation. Please take an appropriate amount of time to read them. Of special importance is the section on converting and maintaining your inventory records in accordance with proven inventory management practices (Section V). The decisions you make in these areas are instrumental to a sound inventory and financial reporting system that is essential to the ongoing management of your business.

B. System Conventions

In order to simplify the description of how certain information is entered into the system, the following conventions are used in the documentation:

1. Special typewriter keys

There are only two special keys to use other than the normal typewriter keys. These keys are indicated by the use of this symbol **<KEY NAME>** to differentiate the name of the key from actually typing the word.

Keys	Purpose
<RETURN>	Use after entering information (see next paragraph)
<INST/DEL>	Deletes last character
<SHIFT>	Never used. All information is entered in "lowercase" letters. All reports are automatically printed out in CAPITAL LETTERS.

2. **<RETURN>** key

When the computer displays asterisks (******), it indicates it is waiting for a response or input from the operator.

If the alpha or numeric information does not fill all the positions indicated by the asterisks, then you must press the **<RETURN>** key after entry.

Example: When the computer asks for stock number, the screen looks like this:

```
Stock Number  : _********
```

Notice that the blinking cursor tells you where your characters will type. This is indicated by an underscore (_) in this documentation. You would type Stock No. A123 as:

```
Stock Number  : ********
                a123<RETURN>
```

because the number is less than the number of asterisks (8). If the stock number was AB-12345, and the input completely filled the asterisks, such as:

****
ab-12345

the computer will automatically advance to the next field on the screen.

Remember, when your input fills all the asterisks, you do not have to press the **<RETURN>** key. With a little practice, this convention will become almost second nature.

When entering data, the **<RETURN>** key can be used to skip a field. Just press **<RETURN>** and the program will skip to the next field. For the first field of a new screen, pressing the **<RETURN>** key without any data allows you to return to the previous menu. As a general rule, when in doubt about where you are in the program or how to get to a different operation, just press **<RETURN>** until you get to the correct menu.

4. Prompting messages

The computer will remind you what information it is expecting by the use of "prompting" messages. These messages will also "flash" when you have made an error. This flashing will alert you to re-enter the information correctly.

These messages appear directly under the screen title. For example:

STOCK RECEIPTS
INVALID CHECK DIGIT

5. Disk errors

The system utilizes floppy magnetic disks for storage of all data. Occasionally, a disk may drop data and cause an error. For this reason, **IT IS IMPERATIVE THAT AT LEAST TWO (2) BACKUP DISKS ARE MAINTAINED FOR EACH DATA DISK.** See Section III, System Menu, for Disk Backup Procedures.

If the following conditions occur, it means a disk error has occurred:

- 1541, Right side light turns red and blinks

A listing of all disk errors may be found in your **Commodore Floppy Disk User's Manual** and is reprinted in Section VII of this guide. When an error occurs, the system will return to the main menu. Re-insert the disk(s), and try the program again. If repeated tries do not work, then you probably have a bad disk and must use one of your back-up disks.

Additionally, there is a series of special error messages concerning the operation of the Inventory Management System. They are described in Section VII, Troubleshooting Guide.

Note: There are several things the user can do to avoid disk data errors. They include:

a. Handle the diskette with care

- Write on labels first, then affix them to the diskette
- Do not touch the exposed surface of the diskette
- When not being used, keep the diskettes in their protective jackets and store them in a cool dry area
- DO NOT remove diskette from drive during operation

b. Use high quality disks.

c. Have your disk drive serviced periodically to ensure that it is clean and operating according to specified tolerances

6. Program Disk and Data Disk

   Your master program disk is used to hold the programs which make up this accounting system. No specific information relating to your company or business is ever stored on the program disk. All such "data", is stored on a data disk. When running the system, you will be prompted to remove and insert either your program disk or your data disk. Simply follow the prompts as indicated. If you accidently insert the wrong disk, you will be warned with a flashing error message. Just continue with the correct disk.

C. Equipment Requirements

The BAS PLUS/4 Inventory Management System has been designed to allow significant flexibility in configuring your hardware. Of major importance is the capability to process the application using one disk drive only.

Specific equipment requirements are:

- Commodore PLUS/4 Computer

- Color or Monochrome Monitor

- Disk Drives

  . 1 or 2 1541's or 1551's

- Printers

  . 1526, MPS 801, MPS 802, or DPS 1101

Install and check-out your equipment by following the equipment operating instructions provided by Commodore Business Machines.

II. INVENTORY MANAGEMENT OVERVIEW

Inventory in your business may represent the largest single investment in your assets, and, in many cases, is managed by "gut-feel". Scientific inventory management involves the application of tried and proven approaches to help manage your inventory investment.

Scientific inventory management has advantages for every company, but until recently the cost of the hardware and software to computerize the process was outside the means of most small to medium size businesses.

The BAS PLUS/4 Inventory Management System now sets a **new standard of excellence** in Software for microcomputers. This system allows your business to benefit by utilizing the same advanced principals of inventory management used by Fortune 500 companies.

A. Theory

There are many excellent books written about scientific inventory management. Certainly, the subject cannot be covered sufficently in this manual. But we will touch upon some of the basic principles that govern the design and implementation of the BAS PLUS/4 Inventory Management System.

There is one general characteristic that applies to most inventories: 85% of the annual dollar usage in a given inventory is usually concentrated in 15% of the items.

This usage distribution suggests a different treatment for different segments of inventory. A common term for this phenomenon is the classification of inventory by "A", "B", and "C" parts. "A" parts usually represent the fewest items but account for a high percentage of the total inventory usage; "C" parts represent the most items which account for the lowest usage. Therefore, "A" parts should be controlled more closely and reviewed more frequently.

Without a computer, determining which parts are of high usage would require many hours of manual review and evaluation, and would have to be repeated quite frequently to determine any changes in trends or usage. A computerized inventory management system provides this review automatically and systematically as part of its reporting function. It is then up to management to use this information effectively to better control the assets of the company.

Another major function of an inventory management system is to recognize, by using a consistent set of rules, when an inventory item should be re-ordered to maximize customer service, while minimizing total inventory. Again, to juggle inventory levels vs. customer service would require extensive manual effort, and because inventories are dynamic, the target levels of inventory are constantly changing.

The BAS PLUS/4 Inventory Management System uses the principle of **Available Balance** and **Re-Order Levels** to determine **when to order more parts.** The system uses the well-known Wilson Lot Size Formula and applies minimum/maximum lot size adjustments to determine **how much to order when more parts are needed.** Neither of these principals are novel. Both are used in thousands of sophisticated businesses everyday to help manage inventory on an exception basis, thus allowing management to focus its time on major pay-off decisions.

B. Inventory Identification

A critical element of controlling inventory is **identifying** inventory uniquely. Many schemes are possible for identification, but most schemes cannot prevent possible duplication of numbers. For example, if manufacturer's numbers are used, there exists the possibility that two different manufacturers may use the same number, thereby negating the uniqueness.

A very workable scheme used by large main-frame inventory management systems is to assign a unique non-significant numeric identification to each inventory item. Then, using a computer algorithm, calculating a **check-digit** which is also unique to the other digits of the number. The check digit scheme is used by this system.

Part Numbers may be four or five digit seed numbers followed by one calculated check-digit. For example, the seed **1001** will calculate a check-digit of **7.** The Part Number is then **10017.** By utilizing this scheme, inventory items can be assigned in any sequence, and each number has a "built-in" check feature to ensure integrity. Also, keyboard entry of numeric data is much faster than alpha/numeric data.

C. Ordering Concepts

Now that we have discussed the importance of segmenting inventory, and a unique identification for each inventory item, we will discuss the basic parts ordering concepts utilized by the system.

The system assumes a fairly uniform demand for parts based on the current usage in a given month. The field in the Inventory File that keeps track of this usage is **Monthly Issues.** Every time an item is picked, the **Monthly Issue** counter for that part is incremented by 1. At the end of the month, the system calculates a **Daily Dollar Usage** by taking the monthly issues and dividing by the average number of work days (21) in a month. The units are then converted to dollar value by using the **Average Cost** of the part.

This usage is a key element in determining a **Re-Order Level** (ROL) for each part. The ROL is calculated by using the following formula:

ROL = [Order Leadtime + Safety Stock (in Days)]
x Daily Usage

This quantity represents the quantity of parts that will be consumed over the leadtime to obtain more parts, while still maintaining some safety stock.

Another concept used in the system is **Available Balance** (AVAIL). It is defined as follows:

AVAIL = Stock-on-Hand + Stock-on-Order - Reservations

This quantity represents the net short term availability of an item to meet customer demand. It considers **Reservations** which are backorders for parts that either cannot be filled due to a shortage, or are waiting to be picked.

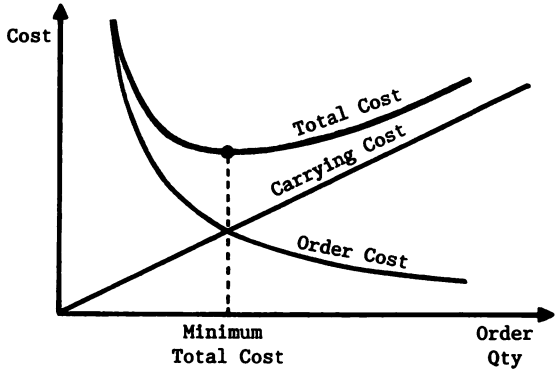
The **Available Balance** also recognizes that orders placed with vendors will soon be available to meet demand. Therefore, by using **Available Balance** as opposed to **Stock-on-Hand** as a measure of inventory availability, management has a more accurate picture of the inventory situation.

The system recognizes the need for an order when the **Available Balance** falls below the **Re-Order Level** for an item. At this point, it must then determine **how much to order.**

The basic principle behind using an **Economic Order Quantity** (EOQ) as the recommended order amount is that the EOQ represents the theoretical optimum quantity to order, considering these factors:

a) Cost of Ordering vs.
b) Cost of Carrying Inventory

These two cost factors vary inversely as follows:



The Wilson Lot Size Formula is used to calculate the optimum order quantity which will minimize total costs -- ordering cost and holding cost. The exact formula is:

$$EOQ = \frac{2 \times O \times U}{H \times A}$$

where: O = Ordering Cost
U = Annual Usage of the Item
H = Holding cost (as a decimal)
A = Average Cost per part

The EOQ derived from this formula is then adjusted to be no less than a minimum days usage (as specified in the I/M Information File) and no more than 65 days worth of parts.

The EOQ is only a suggested order quantity. It does not consider future needs for the part, seasonality, special price breaks available, packaging requirements, or any number of other important factors in determining exactly how much to order.

The ultimate decision regarding the replenishment of inventory must be with the management of the company, not the computer. Remember, the computer is only a tool to provide additional information to management to assist in making these ordering decisions.

III. SYSTEM FUNCTIONS

The Commodore BAS PLUS/4 Inventory Management System is a "menu-driven" system. The "menu" is a selection of computerized inventory management functions from which you can choose to process your information.

To keep the description of each function concise and precise, inventory management terminology is used in defining the systems functions. Be sure to thoroughly review Section II -- Inventory Management Overview for a brief discussion of the inventory theory and terminology used by this system.

The following is the menu for this system:

```
INVENTORY MANAGEMENT MAIN MENU

00  BAS System Menu          01  Enter I/M Transactions

02  Initialize Parameters    03  Print Reports

04  Maint./Disp. Inven. Items  05  I/M Info. File

06  Config. File Maintenance  07  Quit Processing

                             Select <RETURN>
```

Following is a brief description of each menu function.

00) BAS SYSTEM MENU

Purpose: The BAS System Menu is selected by pressing **<RETURN>** or **00**. The BAS System Menu allows you to run any of these other modules. These other systems may be purchased separately from your dealer.

BUSINESS ACCOUNTING SYSTEMS MENU

01	General Ledger	02	Accounts Receivable
03	Accounts Payable	04	Payroll
05	Inventory Management	06	Disk Backup
07	Quit Processing		Select <RETURN>

06 Disk Backup function is very important and is included with your system. It allows you to duplicate any data disk. As mentioned above, **IT IS IMPERATIVE THAT YOU HAVE AT LEAST TWO (2) BACKUP COPIES OF EACH FILE DISK.**

Program disks are copy protected and will not copy. You may obtain security copies from **Commodore Business Machines.**

01) ENTER I/M TRANSACTIONS

Purpose: To enter transactions for stock receipts, stock issues, stock orders, and stock adjustments

When: Daily or when needed

Features: Validates part number check-digit, accesses the Inventory data base for Stock Number, Description, Current SOH, SOO, RES. Provides "real-time" update of the Inventory data base and a detailed audit trail of all transactions affecting changes in inventory balances or valuation. Provides capability to automatically maintain Average Cost for inventory by processing stock receipts at Actual cost and stock issues (parts relieved from inventory) at Average cost. Provides capability to automatically price and extend the retail value of inventory issued from the stockroom.

Sub-Menu Overview:

1) Stock Receipts (stock received into inventory)
2) Stock Issues (stock picked from inventory)
3) Stock Orders (vendor orders for replenishment stock)
4) Stock Adjustments (adjustments to stock-on-hand, stock-on-order, and reservation balances)

Sub-Menu Detail:

1) STOCK RECEIPTS (stock received into inventory). The printer must be on for this function. The following screen format will be displayed (xxx indicates information retrieved from the inventory data base, *** indicates input information required by the operator):

```
STOCK RECEIPTS
------------------------------------

Stk Numb   xxxxxxxx       SOH xxxxx
Desc       xxxxxxxxxxxx   SOH xxxxx
Unit/Mea   x              RES xxxxx
Vend/Com   xx

1) Part Number      : ******
2) Qty Received     : *******
3) Qty Rejected     : *******
4) Qty Accepted     : *******
5) Cur $Cost/Unit   : *******
6) Reference No.    : *******
```

The following edits are perfomed:

Data Field	Edit
Part Number	Must be numeric (no alpha characters) Must pass the check-digit test Must be within range established on the I/M Information File Must be on Inventory File

Data Field	Edit
Qty Received	Must be numeric May be positive (+) or negative (-) May not be zero Maximum value: 9999 (Stock-on-order is reduced by this quantity)
Qty Rejected	Must be numeric May be positive (+) or negative (-) May be zero or <RETURN> Maximum value: 9999
Qty Accepted	Must be numeric Must equal Qty Rec - Qty Rej Maximum value: 9999 (Stock-on-hand is increased by this quantity)
Cur. $Cost/Unit	Note: This represents the incoming cost of new stock. To value new stock at the same cost as current inventory, press **<RETURN>** -- and the current Average Cost will be displayed and used. To input new cost, enter value: Must be numeric Maximum value: $9999.999 (Note: costs are maintained to 3-decimal places for accuracy) The new cost will be averaged with the current cost (proportioned by the ratio of Qty Accepted to SOH) to calculate a new average cost
Reference No.	Enter an appropriate Reference No. for printing on the Stock Receipts Report. Usually Shipper No. or Receiver No. May be alpha/numeric No edits performed

After all information is entered, press **0** to save and record the transaction, or **9** to cancel and re-enter. Once recorded, the transaction is immediately updated on the Inventory File and the audit trail is printed on the Stock Receipts Report.

To exit from this function, press **<RETURN>** for Part Number.

Sample printout of the Stock Receipts Report is shown in Section VI.

Sub-Menu Detail:

2) STOCK ISSUES (stock picked from inventory). The printer must be on for this function. The following screen format will be displayed (xxx indicates information retrieved from the inventory data base, and *** indicates input information required by the operator):

```
STOCK ISSUES

Stk Numb   xxxxxxxx      SOH xxxxx
Desc       xxxxxxxxxxxx  SOH xxxxx
Unit/Mea   x             RES xxxxx
Vend/Com   xx

1) Part Number      : ******
2) Qty Issued       : *******
3) Reserved (Y/N)   : *******
4) $Sell/Unit       : *******
5) Reference No.    : *******
```

The following edits are perfomed:

Data Field	Edit
Part Number	Must be numeric (no alpha characters) Must pass the check-digit test Must be within range established on the I/M Information File Must be on Inventory File
Qty Issued	Must be numeric May be positive (+) or negative (-) May not be zero Maximum value: 9999 (Stock-on-hand is reduced by this quantity. Monthly and Y-T-D Issues are increased by this quantity)

Data Field	Edit
Reserv (Y/N)	Must be **y** or **n** This tells the system whether this issue was previously reserved, and therefore is included in the RES balance. If **y** then the RES Qty will be reduced by the Qty Issued. RES will not be reduced to a negative number.
$Sell/Unit	Note: This represents the unit retail price of stock issued. To price stock at the retail price indicated on inventory, press **<RETURN>** -- and the appropriate retail price (based on the price break formula will be displayed) To input a specific price, enter a value: Must be numeric Maximum value: $9999.999 (Note: costs are maintained to 3-decimal places for accuracy) A new retail price in no way affects the inventory file. The only report affected is Stock Issues which shows both Retail Price, Cost and Gross Profit Margin percentage.
Referen No.	Enter an appropriate Reference No. for printing on the Stock Issues Report. Usually Invoice No. or Customer Reference May be alpha/numeric No edits performed

After all information is entered, press **0** to save and record the transaction, or **9** to cancel and re-enter. Once recorded, the transaction is immediately updated on the Inventory data base and the audit trail is printed on the Stock Issues Report.

To exit from this function, press **<RETURN>** for Part Number.

Sample printout of the Stock Issues Report is shown in Section VI.

Sub-Menu Detail:

3) STOCK ORDERS (vendor orders for replenishment stock). The printer must be on for this function. The following screen format will be displayed (**xxx** indicates information retrieved from the inventory data base, *** indicates input information required by the operator):

```
STOCK ORDERS

Stk Numb xxxxxxxx      SOH xxxxx
Desc     xxxxxxxxxxxx  SOH xxxxx
Unit/Mea x             RES xxxxx
Vend/Com xx

1) Part Number      : ******
2) Qty Ordered      : *******
3) $Cost/Unit       : *******
4) Vendor No        : *******
5) Reference No     : *******
```

The following edits are perfomed:

Data Field	Edit
Part Number	Must be numeric (no alpha characters) Must pass the check-digit test Must be within range established on the I/M Information File Must be on Inventory File
Qty Ordered	Must be numeric May be positive (+) or negative (-) May not be zero Maximum value: 9999 (Stock-on-order is increased by this quantity)
$Cost/Unit	Note: This represents current committed cost of stock ordered. To cost the order at the current cost indicated on inventory, press **<RETURN>** -- and the current average cost will be displayed and used. To input a specific cost, enter a value: e.g., $9.25

Data Field	Edit
	Must be numeric Maximum value: $9999.999 (Note: costs are maintained to 3-decimal places for accuracy) A new committed cost in no way affects the inventory file. Only when stock is Received is the Actual Cost significant. This new committed cost will appear on the Stock Orders Report.
Vendor No.	May be an appropriate vendor reference for printing on the Stock Orders Report. May be alpha/numeric No edits performed
Referen No.	May be an appropriate reference for printing on the Stock Orders Report. Usually Purchase Order Number. May be alpha/numeric No edits performed

After all information is entered, press **0** to save and record the transaction, or **9** to cancel and re-enter. Once recorded, the transaction is immediately updated on the Inventory data base and the audit trail is printed on the Stock Issues Report.

To exit from this function, press **<RETURN>** for Part Number.

Sample printout of the Stock Orders Report is shown in Section VI.

Sub-Menu Detail:

4) STOCK ADJUSTMENTS (adjustments to stock-on-hand, stock-on-order, and reservations balances). The printer must be on for this function. The following screen format will be displayed (**xxx** indicates information retrieved from the inventory data base, *** indicates input information required by the operator):

STOCK ADJUSTMENTS

```
Stk Numb   xxxxxxxx       SOH xxxxx
Desc       xxxxxxxxxxxx   SOH xxxxx
Unit/Mea   x              RES xxxxx
Vend/Com   xx

1) Part Number      : ******
2) S-O-H Adj        : *******
3) S-O-O Adj        : *******
4) Resrv Adj        : *******
5) Reference No     : *******
```

The following edits are perfomed:

Data Field	Edit
Part Number	Must be numeric (no alpha characters) Must pass the check-digit test Must be within range established on the I/M Information File Must be on Inventory File (Note: One or more adjustment fields may be entered)
S-O-H Adj	Must be numeric or blank May be positive (+) or negative (-) Maximum value: 9999 (Stock-on-hand is increased or decreased by this quantity)
S-O-O Adj	Must be numeric or blank May be positive (+) or negative (-) Maximum value: 9999 (Stock-on-order is increased or decreased by this quantity)

Data Field	Edit
Resrv Adj	Must be numeric or blank May be positive (+) or negative (-) Maximum value: 9999 (Reservations are increased or decreased by this quantity)
Referen No.	May be an appropriate reference for printing on the Stock Adjustment Report, such as STK FND (stock found), ORD COR (order correction), etc. May be alpha/numeric No edits performed

After all information is entered, press **0** to save and record the transaction, or **9** to cancel and re-enter. Once recorded, the transaction is immediately updated on the Inventory data base and the audit trail is printed on the Stock Adjustment Report.

To exit from this function, press **<RETURN>** for Part Number.

Sample printout of the Stock Adjustment Report is shown in Section VI.

02) INITIALIZE PARAMETERS

Purpose: To automatically re-calculate daily usage, zero-out monthly issues, re-calculate reorder level, re-calculate economic order quantity, and zero-out Y-T-D issues

When: Monthly

Features: This is an extremely powerful function in the Inventory Management System. **IT MUST BE USED WITH GREAT CARE.** The function will automatically evaluate the current status of a stock item, then, based on the options selected by the user, will: re-calculate the daily usage, and/or zero-out the monthly issue counter, and/or re-calculate the reorder level, and/or re-calculate the economic order quantity. Yearly, ONLY, you should zero-out the Y-T-D issue counter. For a general description of the theory behind these parameters, and the specific formulas used, see Section II -- Inventory Management Overview.

The function may be executed on the entire inventory file, or any subset of the file by using the powerful **Select** option. This option allows the user to specify any combination, of up to 3 different inventory fields, to use as criteria for selecting stock items. For example, you may want to re-calculate usage, re-order levels and economic order quantities only for parts that have a Commodity Code of **m** and a Bin Location of **s**. After you indicate which functions you want to perform, the system will give you the option of specifying this selection criteria.

Note: Re-calculating parameters for the entire inventory file can be quite time-consuming (approximately 4 seconds per item, or 900 items per hour). By selecting a sub-set of the file, you have better control over which items you want re-calculated and reduce the risk of a problem by reducing running time.

Sub-Menu Overview:

1) Re-calculate Daily Usage
2) Zero Monthly Issues
3) Re-calculate ROL
4) Re-calculate EOQ

The system will give you the option of selecting one or more of these functions by displaying:

0=Quit 9=Continue
Enter Function Number *

Enter the appropriate function numbers that you want performed. When done, either press **0** to Cancel and Exit or **9** to Continue on to the selection option.

The system will then display:

0=All Items
Enter No. of Selection Fields *

Enter **0** to select (and process) All Items on the Inventory data base, or a number from **1** to **3** to specify the number of fields you want to use to select the sub-set of inventory records. For example, enter **2**:

The system will now display:

Field No.	Low Value	Hi Value
**	*******	*******
**	*******	*******

Field Selections:

1	p/n	2	stk#	3	desc	4	uom
5	v/c	6	lead	7	loc	8	pbds
9	retl	10	ret2	11	ret3	12	cost
13	usag	14	soh	15	soo	16	res
17	rol	18	eoq	19	m-is	20	y-is

Now, enter Field No. as **1** through **20.** In our example, to select Commodity Code, enter **5**, then the Low Range and Hi Range for the search. In this example enter: **m** for Low Range and **m** for Hi Range. The first selection parameter is now specified. You may also enter **<RETURN>** for Hi Range, in which case it will automatically use the value placed in Low Range. To specify the second selection parameter in this example, enter **7** for Bin Location, then **s** for Low Range and **<RETURN>** for Hi Range.

These selections now instruct the computer to re-calculate parameters only for those stock items that have a Commodity Code = **m and** a Bin Location = **s.**

Values for Low and Hi Ranges may be truncated for "wild-card" searches. For example, to select all items that have a description starting with "abc", just enter **abc <RETURN>.**

The system will now display:

0= Save Selection Criteria
1= Re-enter Selections *

Press **0** to Save, and continue, or **1** to Cancel and re-enter.

The system will now display: 0=Quit
1=Perform Functions *

Press **0** to Cancel and Quit from Re-calculation Function or **1** to Perform the Re-calculations. Note: **This is the last opportunity you have to cancel the function.**

The system will now perform the Re-calculations for all items specified. The screen will indicate: **Reading P/N** and whether or not it is **Selecting P/N.**

To STOP the process during the run, press **s** to Stop, then **c** to Continue or **q** to Quit.

When complete, the system will return back to the Function Menu.

Note: No report is generated for this process. Therefore, you should maintain a log of which items were selected for Re-calculation on a given run.

Sub-Menu Detail:

1) Re-calculate Daily Usage

   If this function is selected, it uses the current value in **Monthly Issues**, divides it by 21 (average number of days in a month) to derive a daily usage. This daily usage is then multiplied by **Average Cost** to get a **Daily Dollar Usage.**

   Daily Dollar Usage is important for controlling inventory. It identifies which items account for the largest percentage of your sales volume and therefore justifies tighter control. These are known as "A" Items; that is, those items that have a high Daily Dollar Usage. The cut-off for categorizing "A" parts is a parameter in the **I/M Information File (see Page III-26).**

2) Zero Monthly Issues

   If this function is selected, the **Monthly Issues** quantity will be zeroed out. (If function 1 is also selected, daily usage is re-calculated <u>before</u> the monthly issues are zeroed out.)

   This resets the field for accumulating issues for the next month.

   Note: Month-end reports such as the <u>Sales Analysis</u> Report should be run before performing this function.

3) Re-calculate ROL

The Re-Order Level (ROL) is a key parameter in scientific inventory management. It is calculated as follows:

ROL = [Leadtime (Days) + Safety Stock (Days)] X Daily Usage

The ROL represents the quantity of parts to be used over the leadtime to acquire additional parts. The purpose of the Re-Order Level is to trigger an order at a precise time. When the **Available Balance** (see description in Section II) falls below the ROL it indicates replenishment stock should be ordered.

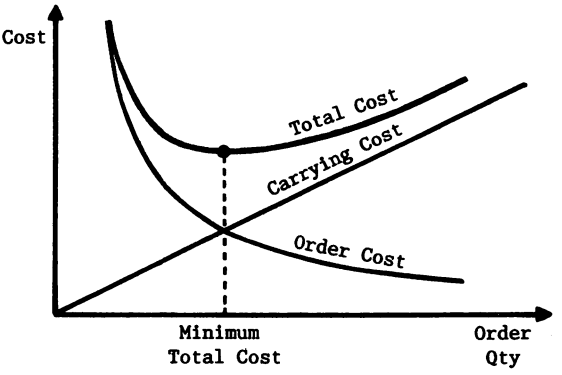
If this function is specified, the ROL will be automatically calculated based on the order **Leadtime** for the part, **Safety Stock** indicated in the I/M Information File, and the **Daily Usage** of the part.

4) Re-calculate EOQ

The Economic Order Quantity (EOQ) represents the theoretical optimum quantity to order, considering these factors:

a) Cost of Ordering
vs.
b) Cost of Holding Inventory

These two cost factors change in different directions as the order quantity changes, as shown in the diagram on the following page.



Analysis of the two major cost elements, order and carrying costs, determines the order quantity that will result in the lowest cost.

The larger the quantity ordered the greater the cost of holding inventory, and the smaller the cost of ordering (due to fewer orders over time). The smaller the quantity ordered, the smaller the holding cost and the larger the ordering cost. The optimum order quantity per part can be found by minimizing the total of the costs involved for each part. The Wilson Lot Size Formula is used to calculate this optimum order quantity, then the quantity is modified to be a minimum number of days stock (at the current daily usage) as indicated in the I/M Information File, or a maximum number of days stock of 65 days.

A more detailed discussion of EOQ is presented in Section II.

If this function is specified, the EOQ will be automatically calculated based on the Ordering Cost and Holding Cost indicated in the I/M Information File, and the Daily Usage and Average Cost of the part.

5) Zero Y-T-D Issues

If this function is selected, the Year-To-Date Issues quantity will be zeroed out.

This resets the field for accumulating issues for the next year.

Note: Year-end reports such as the Sales Analysis Report should be run before performing this function.

Ø3) Print Reports

Purpose: To print any of the following operating and management reports:

- Stock Status Report
- Sales Analysis Report
- Price Catalog
- Shortage Report
- Re-Order Report
- Physical Inventory Report
- Inventory Summary Report

When: Monthly or when needed

Features: This reporting function provides the flexibility to manage inventory by exception. By utilizing the powerful **Select** option, the user can run any of the above reports on the entire Inventory data base or any subset of the Inventory.

An **Inventory Summary** Report is automatically produced with any other report requested. This Inventory Summary provides a comprehensive display of the firm's inventory - offering the Inventory Control Manager a real "tool" to help manage inventory dollars.

Sub-Menu Overview:

1) Stock Status Report
2) Sales Analysis Report
3) Price Catalog
4) Shortage Report
5) Re-Order Report
6) Physical Inventory Report
7) Inventory Summary

The system will give you the option of selecting one of these reports by displaying:

Ø=Quit
Enter Report Number *

The system will then display:

Ø=All Items
Enter No. of Selection Fields *

Enter Ø to select (and process) all items on the inventory data base, or a number between 1 and 3 to specify the number of fields you want to use to select the subset of inventory records. For example, enter 2:

The system will now display:

Field No.	Low Value	Hi Value
**	*******	*******
**	*******	*******

Field Selections:

1	p/n	2	stk#	3	desc	4	uom
5	v/c	6	lead	7	loc	8	pbds
9	ret1	1Ø	ret2	11	ret3	12	cost
13	usag	14	soh	15	soo	16	res
17	rol	18	eoq	19	m-is	2Ø	y-is

Now, enter Field No. as 1 through 2Ø. In the example cited earlier, to select Commodity Code, enter 5, then the Low Range and Hi Range for the search. In this example enter: ■ for Low Range and ■ for Hi Range. The first selection parameter is now specified. You may also enter <RETURN> for Hi Range, in which case it will automatically use the value placed in Low Range. To specify the second selection parameter in this example, enter 7 for Bin Location, then s for Low Range and **<RETURN>** for Hi Range.

These selection options now instruct the computer to re-calculate parameters only for those stock items that have a Commodity Code = **m and** a Bin Location = **s.**

Values for Low and Hi Ranges may be truncated for "wild-card" searches. For example, to select all items that have a description starting with "abc", just enter **abc <RETURN>.**

The system will now display:

Ø= Save Selection Criteria
1= Re-enter Selections *

Press **Ø** to Save, and continue, or **1** to Cancel and re-enter.

The system will now display: Ø=Quit 1=Print Report *

Press **Ø** to Cancel and Quit **1** to Print the report.

The system will now print all items specified. The screen will indicate: **Reading P/N** and whether or not it is **Selecting P/N.**

To STOP printing at any time, press **s** to Stop, then **c** to Continue or **q** to Quit.

When complete, the system will return back to the Main Menu.

Note: The **Inventory Summary** is automatically generated at the end of each report.

Sub-Menu Detail:

The details of each report along with a photo-reduced sample are shown in Section VI - Sample Reports.

04) Maintain/Display Inventory Items

Purpose: To Add, Change, or Delete an item to the Inventory data base

When: When needed

Features: This function provides the capability to Add new inventory items to the file, Change any field on an existing inventory item, or Delete an inventory item from the file.

The function will also produce three reports: Inventory List, Inventory Balances, and Part Number Listing.

Sub-Menu Options:

01) Add (Add new items to file)
02) Chg (Change or Delete items)
03) Print (Print Reports)

The system will give you the option of selecting the above functions. For function **01** and **02** the following screen format is used:

INVENTORY FILE MAINTENANCE/INQUIRY

```
01)Part Number      : ******
02)Stock Number     : ********
03)Description      : ****************
04)Unit of Measure  : *
05)Vend/Comm Code   : **
06)Leadtime (days)  : ***
07)Bin Location     : *
08)PB/Desc Codes    : ****
09)Price 1          : *********
10)Price 2          : *********
11)Price 3          : *********
12)*Avg Unit Cost   : *********
13)*Daily Avg Usag  : *********
14)Stock-on-Hand    : *********
15)Stock-on-Order   : *********
16)Reservations     : *********
17)*Re-Order Level  : *********
18)*Econ Order Qty  : *********
19)*Monthly Issues  : *********
20)*Yearly Issues   : *********
```

Sub-Menu Details

These computer edits are performed to Add or Change data fields.

The following edits are perfomed:

Data Field	Edit
Part Number	Must be numeric (no alpha characters) Must pass the check-digit test Must be within range established on the I/M Information File Must not be on Inventory data base (Add) Must be on Inventory data base (Change)

Note: A special "quick-add" feature allows you to Add new items without using the check-digit. Enter either a 4-digit or 5-digit number with "*" as the last character. This will automatically calculate the check-digit and add the record to the file.

Stock Number	May be alpha/numeric No edits performed
Description	May be alpha/numeric No edits performed
Unit/Measure	Must be entered Blank defaults to **e**, each Use the following coding: **a** carton **l** lbs **b** box **p** package **c** case **r** ream **d** dozen **s** gross **e** each **t** ton **g** gallon **x** other
Ven/Comm Co.	Suggested use as Commodity code May also be used as a Vendor code May be alpha/numeric No edits performed
Leadtime (days)	Indicates the number of days to replenish this item from release of a Purchase Order to Receipt into stock Must be numeric
Bin Number	Indicates location of the part. May be alpha or numeric.

Data Field	Edit
Price Break/ Disct. code	May be alpha/numeric No edits performed Determines at what quantity the price for a part will break to Price 2 and Price 3 4-digit code indicating the following: xyzz where x - price break code corresponding to Price 2 y - price break code corresponding to Price 3 zz - additional percentage discount (used by Order Entry) Price Break Codes: 1 1 a 10 i 50 q 132 2 2 b 11 j 60 r 144 3 3 c 12 k 72 s 200 4 4 d 20 l 84 t 500 5 5 e 24 m 96 u 1000 6 6 f 30 n 100 w 2000 7 7 g 36 o 108 x 4000 8 8 h 48 p 120 y 5000 9 9 z 10000 Example: To code three prices; Price 1 for quantity 1 - 5 Price 2 for quantity 6 - 23 Price 3 for quantity 24 - up Code: **6e00** If there is an optional 10% discount over-and-above the price break then, **6e10**
Price 1	Retail Unit Price (with no price break) or for quantity less than first price break
Price 2	Unit Price after first price break code

Data Field	Edit
Price 3	Unit Price after second price break code Prices must be numeric Maximum value: $9999.999 (Note: Prices are maintained to 3-decimal places for accuracy)
*Average Unit Cost	Optional field System will automatically calculate average, based on incoming cost of new receipts Must be numeric Maximum value: $9999.999 (Note: Cost is maintained to 3-decimal places for accuracy)
*Daily Avg Usage	Automatically calculated by system Must be numeric
Stock-on-Hand	Must be numeric Maximum value: 9,999,999
Stock-on-Order	Must be numeric Maximum value: 9,999,999
Reservations	Must be numeric Maximum value: 9,999,999
*Re-Order Level	Optional System automatically calculates Must be numeric Maximum value: 9,999,999
*Econ Order Qty	Optional System automatically calculates Must be numeric Maximum value: 9,999,999

Data Field	Edit
*Monthly Issues	Optional System automatically calculates Must be numeric Maximum value: 9,999,999
*Yearly Issues	Optional System automatically calculates Must be numeric Maximum value: 9,999,999

To delete inventory items, use **02** Change, then press **d** **<RETURN>** and enter the code **del.**

For function **03 Print Reports**, the system will display:

1=Balances 2=List 3=Part Numbers *

Press **1** to print **Inventory Balances**, press **2** to print **Inventory List**, press **3** to print a list of valid **Part Numbers.**

Detailed descriptions and photo-reduced report samples are shown in Section VI.

05) I/M INFORMATION FILE

Purpose: Enter or change the **Company**, **Password**, and **Inventory Parameters. It also initializes the Inventory File. Note:** the first time this option is selected, the system will automatically prompt you for creation of the I/M Information File. Once the file is created, you will be prompted for generation of the initial inventory file. Subsequent uses of this option will be to change the I/M Information File only.

When: As needed

Procedure:

There are several special feature codes in the I/M Information File which provide the system with very sophisticated capabilities:

Field	Allowable codes	Comments
Company	Enter your company name	
System date	Not used	This date is set automatically each time you turn the system on.
Password	Enter your password	
P/N Start	Enter the Starting P/N (without check-digit)	System is pre-set to start at 1001.
P/N End	Enter the Ending P/N (without check-digit)	System is pre-set to end at 1100. This parameter MAY BE changed at any time. It is suggested that this limit be as low as possible until more capacity is needed. BY KEEPING THE END P/N LOW, PROCESSING TIME FOR THE SYSTEM WILL BE FASTER.

Field	Allowable codes	Comments
Class A $Cut	Dollar cut-off for Class "A" Parts Parts with a Daily Dollar usage => than this parameter are Class "A"	Group the high dollar volume parts for tighter inventory management
Class B $Cut	Enter cut-off value for Class "B"	System is pre-set to 50
Min EOQ Days	Enter the minimum number of days supply for calculating the EOQ System is pre-set to 10 Days	EOQ is calculated using the Wilson Lot Size formula, then adjusted to be an OPTIMUM quantity based on minimum EOQ Days supply of parts OR a maximum quantity based on 65 days supply of parts (using the Daily Usage)
Safety Stock Days	Enter the number of days of safety stock System is pre-set to 5 days	This parameter is used to calculate the ROL. Increasing Saftey Stock will increase average inventory
Holding % Cost	Enter 2-digit percentage used for holding cost System is pre-set to 20%	This parameter is used in the EOQ calculation formula to balance holding cost vs. ordering cost
Ordering Costs	Enter cost to process 1 order System is pre-set to $15	This parameter is used in the EOQ calculation formula to balance holding cost vs. ordering cost

To change any field, enter **field number** then the new information. To print out a listing of the **I/M Information File**, enter **99**.

06) CONFIGURATION FILE MAINTENANCE

Purpose: Provides the capability to describe the specific equipment configuration to the BAS PLUS/4 Inventory Management application, including the ability to change it if your equipment changes (e.g. Add a second disk drive)

When: For one disk unit (e.g. 1 1541)

- Whenever you change disks or printers.

For two disk units (e.g. 2 1541's)

- Every time you turn your hardware on you will have to change the unit number of your second disk unit

  Note: This routine will do that automatically.

- Whenever you change disks or printers.

Sub menu: 0) Quit Processing, after configuration is defined

1) Change Configuration, to define or change equipment configuration

FIELD	ALLOWABLE CODES
Disk	80 = 1 1541
	90 = 2 1541's
Printer	M = Standard Commodore Printer
	Q = Printer with no line feed.
	F = Printer with a line feed.

2) Change Unit Number, to assign unit numbers when two disk units are used. Note: Be sure secondary disk is turned off (e.g. the disk unit to be used for data files) before selecting Sub Menu item 2.

The system will prompt you to turn the primary unit (i.e., unit used for program disk) off and the secondary unit on. Then press **<RETURN>** to change the secondary drive to unit 9.

Technical note: The system assumes that the main drive is pre-set to device number 8, which is the way it is shipped from Commodore.

User Note: It is recommened that you attach a label to each disk device, as follows:

-Unit 8/Drive Ø (primary)
-Unit 9/Drive 1 (secondary)

Note: Change Unit Number is not required if you have your dealer permanently change your disk drive unit number to unit 9.

For Two Drive Systems

When making a backup copy on a brand new disk, you will have to use the **NEW** command **2**. This command will place formatting information on a new disk in drive 1 (left drive) so that it can then copy from drive Ø. After the backup copy is complete, the computer will check that a good copy was made. If not, a message will inform you "BAD COPY RE-DO" and you should try copying again. If after two (2) tries, you still get a bad copy, then try using another (in drive 1) to copy on. Under certain circumstances, it is possible that the operating disk (drive Ø) is bad, and to recover you will have to use a previously backed-up disk.

Just follow the specific instructions on the screen when you use BAS System Menu functions.

For One Drive Systems

The back-up can still be performed. However, it will involve six separate passes, each of which will require removing and inserting the original and back-up diskettes. Furthermore, if you are backing up to a new disk, you will have to format the disk first. To format the disk, exit the system and do the following:

Enter **HEADER** "diskname",DØ,I#

Where diskname is the name you want to assign to the diskette, and **#** is a two character **id** number.

Example: **HEADER** "Data Disk", DØ,IØ3
<RETURN>

Note: When you are prompted for an id number, enter a 2-digit number that is different than the id number you assigned for your I/M data disk.

After the disk has been formatted, reload the application program and:

Type: **<SHIFT><RUN/STOP>**

Ø7) QUIT PROCESSING

Purpose: Allows you to quit your current session with the Inventory Management program.

How: As desired.

Sub Menu: You will be asked "Are you sure? (y/n)"
"y": Will return you to PLUS/4 Basic.
"n": Will return you to the I/M Main Menu.

IV. SYSTEM START-UP

A. Overview

The following procedure should be used to start-up the system at the beginning of the day.

B. Initializing the System for first use

The following sequence should be used when you first implement the system:

- Read this manual.
- Install Equipment as indicated in Commodore installation manuals
- Prepare an **Operating** copy of **I/M Data Disk**
  - . Place a new high quality disk in drive 0
  - . Enter:
    HEADER"I/M data disk", D0,I01 **<RETURN>**

    Note: use the numbers one (1) and zero (0)

    (If you get a **file open** error, repeat)
  - . Disk will start spinning
  - . Wait until disk drive light goes off
  - . Remove disk and label it.
- Start system up as indicated above in Par. C.
- Select **05 I/M Information File** to create a I/M Information File and an initialized Inventory File on your new I/M Data Disk (See Section III-26)
- Assign Part Numbers as indicated in Section II.
- Now follow Daily Inventory Processing as indicated in Section V.

C. Daily Start-up Sequence

1) Disconnect any peripheral equipment not used by the BAS PLUS/4 application (e.g Joy Sticks, game cartridges, cassette units)

2) Turn on Commodore PLUS/4, floppy disk drives, and Printer.

Note: If there are two drives, turn the primary drive on only.

3) Insert **I/M Program Disk**, side 1, in drive 0

4) Press: **<SHIFT> <RUN/STOP>**, simultaneously.

Read copyright notice carefully. Note that it is **unlawful to copy, duplicate, sell or distribute unauthorized copies of this software product disk--violators will be prosecuted to the full extent of the law.**

5) After the copyright message, you will be prompted to enter the current date. Enter the date using the mmddyy format only.

Note: The system will automatically update the I/M Information File. If you do not want to change the date currently in the I/M Information File, just press **<RETURN>**.

6) Enter: **pass**(or whatever your password is)

Note 1: Though you enter the password at this point, it will be verified again as each application module is executed. Review your password entry carefully prior to responding **Y**-yes to the screen prompt.

Note 2: The password can be changed by using **I/M Information File 05** (refer to page III-26).

7) Now you may execute any of the functions specified in Section III-**System Functions.**

Note: If you have more than 1 disk unit (e.g. two 1541's) you must execute **06 Configuration File Maintenance** first.

D. Turning off the System

Note: Before turning off the system, you should press **<RETURN>** until you get the BAS System Menu. Then, remove the disk(s), and turn off all components.

NEVER TURN THE SYSTEM OFF OR ON WITH FLOPPY DISKS IN THE DRIVES. THIS CAN CAUSE PERMANENT DAMAGE TO THE FLOPPY DISKS AND POSSIBLE LOSS OF DATA.

V. INVENTORY MANAGEMENT PROCEDURES

A. Overview

All data processing systems have specific cycles for data entry, updating and reporting. The Commodore BAS PLUS/4 Inventory Management System is very flexible in design. The Inventory File may be updated as frequently as desired, usually "real-time" to obtain current information on your inventory stock status.

This section presents a guide for following appropriate operating procedures and the proper execution of computer procedures. We recommend that initially you follow this sequence exactly until you have developed experience on the system. Of course, you have the option of developing your own internal procedures once you are intimately familiar with the operation of the system.

B. Converting Inventory Records

The major effort to install the Inventory Management System is the initial commitment to convert inventory records from the current system to the computerized system. Since conversion of a typical firm's inventory records to a computerized system can be a very time-consuming manual effort, **it is recommended that you start by converting only a small sample of parts first, perhaps 50-60, to test the entire operation of the new system and new procedures.** This test will also provide you with the proper "insight" to determine the best coding schemes for Commodity code, Bin Location, etc. ensuring that when you convert all your parts, the effort will produce the management results that you want.

You may wish to divide the data entry by lines or by types of inventory - entering the inventory in stages to reduce the wear and tear on yourself and your personnel. Either way, make sure all accounts are accurate. Be sure to enter all of your "A" or most important items first.

Each inventory item requires a unique identification, known as the Part Number. This Part Number can be up to a six digit non-significant number (no alpha characters) with a check-digit as the last digit. A check-digit is the convention used in large inventory managememt systems to provide a "built-in" check on the integrity of a part number. The exact formula used by the BAS Inventory Management System is not important. . .what is important is that a check-digit protects against most inadvertent typing errors when entering part numbers.

For example: The seed number **1001x** when passed through the check-digit routine will generate a check-digit of **7.** So, the full part number is **10017.** Any other number as the last digit will result in an **Invalid Checkdigit** error and the system will prompt to re-enter the number correctly.

To initially convert your inventory items to the check-digit system, you will need a list of valid part numbers. Before you run the list, establish the range of seed numbers that you will use in the system by using **05) I/M Information File.** The system comes pre-set from Commodore with a starting seed number of **1001** and an ending seed number of **1100** -- 100 numbers. **Whenever possible, you should compress the range of seed numbers needed in order to maximize the processing speed of the system.** The list of valid part numbers generated from these sample seed numbers is shown on the sample Part Number Report in Section VI.

Once you decide the seed range, run the Part Number Report by using Function **04 Maintain/Display Inventory Items, 03 Print Reports**, 3) Part Numbers.

Use this P/N list to re-assign your existing inventory identification to the new system. You may want to keep your current identification as a cross-reference. If so, this number can be entered in the **Stock Number** field, which is an eight character alpha/numeric field in the Inventory File.

Now, use the **Inventory File Maintenance Coding Sheet** (sample on page VI-17) to code the specific information for each part number. You will have to determine your own coding scheme for **Vend/Comm Code** and **Bin Location.** These are important fields as selection parameters. Choose your codes appropriately so that you will be able to extract reports by using a range of values within each code. For example, you may decide to use V/C to be commodity codes, and using the first character of the Stock Number to be Vendor code. Now, you will be able to extract inventory by either Commodity code OR Vendor code by using the **Select** capability in **03 Print Reports.**

It is reasonable to take several weeks to convert your entire inventory file, depending on the manpower resources you have available and the size of your inventory.

C. Initializing Inventory Balances

There are several approaches to initialize inventory balances.

Once part numbers are **Added** to the system using **04 Maintain/Display Inventory Items**, 1 Add Function, you can generate a Physical Inventory Report, selected by Bin Location. From this report, you can perform a physical inventory by location of your stockroom and use the report as a turn-around document to update actual **Stock-on-Hand** (SOH) Balances.

Stock-on-Hand Balances can either be entered directly to the Inventory File by using the **4) Maintain/Display Inventory Items** (thereby by-passing audit trails) or more preferably by using **01 Enter I/M Transactions, 4** Stock Adjustment Function. This approach will generate a detail audit trail of each part number's starting SOH Balance and change in SOH Balance.

The specific approach you use should be the result of careful planning with your dealer, your accountant, and your staff. Once you have initialized inventory balances, you **must maintain** all inventory movement using the procedures suggested below. **This is an important decision and a key management responsibility. The system will only produce inventory information if your people are well indoctrinated and motivated to use the new procedures and provide strict control over all inventory movement.**

D. Daily Inventory Processing

Daily, the following types of procedures will normally be required:

- Process Stock Receipts
- Process Stock Issues
- Process Stock Orders
- Process Inventory Adjustments
- Process Customer Order Needs
- Back-up Inventory File

To start-up the computer, see Section IV - System Start-up.

1) Process Stock Receipts

Operating Procedure

a) As stock is received into the warehouse (stocking location), a document flow must be established to control that inventory was received. Normally this consists of a receiving log, where each stock receipt is logged.

b) At this receiving control point, the inventory received must be converted to the Part Number, and the following additional information must be captured:

- Quantity Received
- Quantity Rejected (failed QA inspection)
- Quantity Accepted (and available)
- Actual unit cost (if known and different from average cost)
- Reference number (log number, receiver, etc.)

c) Manual control procedures, as outlined above are critical to the success of any manual or computerized inventory control system.

Computerized Procedure

a) Use **01 Enter I/M Transactions**, 1 Stock Receipts Function to enter and print each receipt from the log entry referenced above. If the system is "on-line" all day, then the **Stock Receipts** Report generated by the computer may eliminate the need for a manual log.

Stock receipts may be processed throughout the day, depending on the frequency of receipts, the importance of updating the inventory file immediately, and the accessability of the computer.

Whenever updates occur, control of recording incoming stock is a **key** responsibility of your personnel.

2) Process Stock Issues

Operating Procedure

a) As stock is issued (picked) from the warehouse (stocking location), a document flow must be established to control what inventory was issued. Normally, this consists of a pick report, where each stock issue is logged.

b) At this issuing control point, the following additional information must be captured:

- Quantity Issued
- Previously Reserved?
- Retail Price (if known and different from standard retail prices on the system)
- Reference Number (Invoice No., Order No., etc.)

Note: If you are using **Reservations** to commit parts to a given customer, then it is important that issues for previously reserved parts be indicated as such (in order to reduce the RES Qty in the file). See Paragraph 5 - Process Customer Order Needs.

c) Manual control procedures, referenced above are critical to the success of any manual or computerized inventory control system

Computerized Procedure

a) Use **01 Enter I/M Transactions**, 2 Stock Issues Function to enter and print each issue from the control maintained above. If the system is "on-line" all day, then the **Stock Issues** Report generated by the computer may eliminate the need for a manual log.

Stock issues may be processed throughout the day, depending on the frequency of issues, the importance of updating the inventory file immediately, and the accessibility of the computer.

Whenever updates occur, control of recording outgoing stock is a **key** responsibility of your personnel.

3) Process Stock Orders

Operating Procedure

a) One of the functions of the Inventory Management System is to provide reporting to management of Recommended Re-Orders and Shortage conditions. The **Re-Order** Report and **Shortage** Report, generated by **Ø3 Print Reports**, alerts management to the potential need to re-order stock.

UNDER NO CIRCUMSTANCES SHOULD YOU AUTOMATICALLY ORDER ANY REPLENISHMENT STOCK BASED PURELY ON A COMPUTER REPORT. THE ORDERING DECISION IS A MANAGEMENT DECISION. IT REQUIRES CAREFUL ANALYSIS OF THE CURRENT STOCK POSITION OF A PART, THE AVAILABLE BALANCE OF A PART AND THE COMPANY'S FUTURE NEED FOR STOCK. THE COMPUTER ONLY RECOMMENDS RE-ORDERS BASED ON CURRENT AND PAST INFORMATION, NOT FUTURE NEEDS.

THE USER IS SOLELY RESPONSIBLE FOR ORDERING STOCK, NOT THE INVENTORY MANAGEMENT SYSTEM, OR COMMODORE BUSINESS MACHINES, INC. OR ANY FIRM AFFILIATED WITH COMMODORE IN THE SALE OF OR TRAINING FOR THIS SYSTEM.

b) Once management has decided to replenish stock, a purchase requisition should be initiated and approved by the appropriate personnel. The Controller or Purchasing Agent should then assign a company Purchase Order Number for this requirement.

c) At this control point, the following additional information must be captured:

- Part Number required
- Quantity Ordered
- Unit Cost (if known and different from average cost
- Vendor Name and Number
- Reference Number (e.g., PO Number)

d) Manual control procedures, referenced above are critical to the success of any manual or computerized inventory control system.

Computerized Procedure

a) Use **Ø1 Enter I/M Transactions,** 3 Stock Orders Function to enter and print each item ordered from the authorized Purchase Order. If the system is "on-line" all day, then the **Stock Orders** Report generated by the computer may be used to augment the above paperwork procedure.

   Stock Orders may be processed throughout the day, depending on the frequency of orders, the importance of updating the **Available Balance** in the Inventory File immediately, and the accessibility of the computer.

   Whenever updates occur, control of recording stock orders is a **key** responsibility of your personnel.

4) Process Stock Adjustments

Operating Procedure

a) As stock adjustments are required, either from stock found, taking a physical inventory, correcting order quantities, etc., these adjustments should be documented on an Adjustment Log.

b) At this control point, the following information must be captured:

- Part Number
- Quantity + or -
- Type of Adjustment (SOH, SOO, or RES)
- Reference (Log number, reason, etc.)

c) Manual control procedures, per above, are critical to the success of any manual or computerized inventory control system

Computerized Procedure

a) Use **01 Enter I/M Transactions, 4** Stock Adjustment Function to enter and print each adjustment from the control maintained above. If the system is "on-line" all day, then the **Stock Adjustment** Report generated by the computer may eliminate the need for a manual log.

Stock adjustments may be processed throughout the day, depending on the frequency of issues, the importance of updating the inventory file immediately, and the accessibility of the computer.

Whenever updates occur, control of recording adjustments is a **key** responsibility of your personnel.

5) Process Customer Order Needs

Operating Procedure

a) One of the functions of the Inventory Management System is to provide the recognition that customer requirements cannot always be met immediately by filling an order from stock -- either due to lack of stock or the lag time to fill and pick the order.

The Inventory Management System recognizes this need by use of **Reservations.** Strickly speaking, **Reservations** represent a quantity of parts committed to a specific customer need against the on-hand and on-order balances to be issued in the short run. Thus, **Reservations** reduce the available balance of parts for satisfying other needs, thereby creating a more accurate picture of the real demand on a part.

Reservations are a key element in determining the point in time when you should replenish stock. The BAS PLUS/4 Inventory Management System considers **Reservations** in the calculation of an **Available Balance.**

In order to maintain **Reservations**, it is necessary to post "unfilled" orders to the Inventory Management System by using **01 Enter I/M Transactions**, **4** Stock Adjustments Function, and entering the demand as a positive RES Adjustment.

6) Back-up Inventory File

Operating Procedure

a) Daily, or after any significant use of the Inventory System, the **I/M Data Disk** should be duplicated using the Back-up procedure outlined in Section III)

FILE BACK-UP'S ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE SYSTEM. DUE TO THE NUMBER OF ACCESSES MADE TO THE INVENTORY FILE FOR INFORMATION, DISKS WILL WEAR OUT! IF A PROBLEM IS ENCOUNTERED, YOU MAY HAVE TO RECOVER BY USING THE LAST GOOD BACK-UP DISK AND RE-ENTERING ALL TRANSACTIONS SINCE THE LAST BACK-UP.

THEREFORE, A BACK-UP FILE SHOULD BE MADE AT LEAST DAILY, USING A DIFFERENT DISK FOR EACH DAY OF THE WEEK. THIS PROVIDES 5 DAILY BACK-UPS FOR PROTECTION.

b) After the copy is complete, remove the back-up disk, place an appropriate label on the disk, and store for the particular day of the week.

This procedure should be repeated each day the system is used to update any information.

E. Monthly Inventory Processing

Monthly, the following types of procedures will normally be required:

- Print Reports
- Calculate Parameters
- Back-up Inventory File

To start-up the computer, see Section IV - System Start-up.

1) Print Reports

Operating Procedure

a) Monthly, or more frequently, any of the reports produced by the system may be run.

Of special importance are the **Re-Order Report** and **Shortage Report** which alert management to the potential need to re-order stock. These reports may be run weekly or more frequently, depending on your specific needs.

Computer Procedure

a) Use **03 Print Reports**, then specify the report number and Select the sub-set of the Inventory File you want to use. See detail description in Section III, Page III-18.

2) Calculate Parameters

Operating Procedure

a) Monthly, or more frequently, the system should be used to re-calculate ordering parameters, and monthly, to re-set the Monthly Issue Counter.

For a detailed procedure, see Section III, Page III-12.

3) Back-up Disks

Operating Procedure

a) Monthly, additional Back-up Disks should be made and filed for safe keeping. Following the same procedure as the Daily Procedure.

F. Year-End Inventory Processing

At year-end, the following procedure will normally be required:

- Zero-out Y-T-D Issue Counter
- Back-up Inventory File

To start-up the computer, see Section IV - System Start-up.

1) Zero-out Y-T-D Issue Counter

Computer Procedure

a) Use **02 Initialize Parameters, 7** Zero Y-T-D Issues to re-set the Issue Counter.

For a detailed procedure, see Section III, Page III-12.

2) Back-up Disks

Operating Procedure

a) Yearly, additional Back-up Disks should be made **(before zero-ing out Issue Counters)** and filed for safekeeping. Follow the same procedure as as outlined for Daily Processing.

VI. SAMPLE REPORTS

This section contains sample reports from the BAS PLUS/4 Inventory Management System.

Each report is shown photo-reduced and included as an example of the key control documents you will use in managing and controlling your operation. Additionally, a brief profile of each report has been prepared to describe its purpose, menu item to be selected and frequency of preparation.

The index of reports is as follows:

Report Title	Page
Stock Receipts	VI - 2
Stock Issues	VI - 3
Stock Orders	VI - 4
Stock Adjustments	VI - 5
Inventory Summary	VI - 6
Stock Status Report	VI - 7
Sales Analysis Report	VI - 8
Price Catalog	VI - 9
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Re-Order Report	VI -11
Physical Inventory Report	VI -12
Inventory Balances	VI -13
Inventory List	VI -14
Part Numbers	VI -15
I/M Information File	VI -16
File Maintenance Coding Sheet	VI -17

Report Title: **Stock Receipts**

Purpose: Provides a detailed audit trail of all **Receipt** transactions

How: **01 Enter I/M Transactions**, 1 Stock Receipts

When: Generated automatically

Key Data: Shows stock position of the part before receipt and costs receipts at **Actual** cost (if entered) or **Average** cost on the file

```
                    ABC ASSOCIATES INC.                          PAGE 1
                       STOCK RECEIPTS
                     05/25/84 GEN 4
=================================================================================

P/N    STK NUMB DESCRIPTION UM VC : QTY RVD QTY REJ QTY ACC $COST/UNIT REFERENCE

10017  TP-4356  51/4 DISKETT B A1 :      25       0      25   $ 32.500 A-4367
SOH=  1330  SOO=   100  RES=    0 :   $ 813    $ 0   $ 813

10021  RJ24      2-PART STATE P A3 :      15       0      15   $ 89.500
SOH=   500  SOO=   250  RES=    0 :  $ 1343    $ 0  $ 1343

10036  MP1223    ACCT PAY CHE P A5 :      50       8      42  $ 140.500 A-43261
SOH=    25  SOO=    25  RES=    0 :  $ 7025  $ 1124  $ 5901

10069  MPH89=0   DUALVUE ENVE B A4 :      25       0      25   $ 72.000 A-12
SOH=   100  SOO=     0  RES=    0 :  $ 1800    $ 0  $ 1800

10055  MP987     2-PART INVOI P A2 :      24       0      24  $ 108.980 C-264
SOH=    25  SOO=     0  RES=    0 :  $ 2616    $ 0  $ 2616

10074  10074     TYPING STAND E A6 :      19       2      17    $ 3.990 C/364
SOH=     5  SOO=     0  RES=    0 :    $ 76    $ 8    $ 68

---------------------------------------------------------------------------------
 6  TRANSACTIONS ENTERED   TOTALS : $ 13673  $ 1132 $ 12541

END OF REPORT
```

Report Title:	**Stock Issues**
Purpose:	Provides a detailed audit trail of all **Issue** transactions (picks from the stockroom)
How:	**01 Enter I/M Transactions**, 2 Stock Issues
When:	Generated automatically
Key Data:	Shows stock position of the part <u>before</u> issue; costs issues at **Average** cost on the file and prices issues at appropriate retail price, based on the price break formula, or uses the retail price entered for the transaction; calculates **Gross Profit %** for each item

```
                          ABC ASSOCIATES INC.                          PAGE 1
                              STOCK ISSUES
                            05/25/84 GEN 4
 ==================================================================================
 P/N    STK NUMB DESCRIPTION UM VC : QTY ISS RES  $ RETAIL   $ COST GP% REFERENCE

 10017  TP-4356  51/4 DISKETT B A1 :      4  N  $ 140.500    3.544  97 B-101
 SOH=  1355  SOO=    75  RES=    0 :                $ 562     $ 14

 10021  RJ24      2-PART STATE P A3 :      6  N  $ 219.500   16.199  93 B-105
 SOH=   515  SOO=   235  RES=    0 :                $ 1317     $ 97

 10036  MP1223   ACCT PAY CHE P A5 :      5  Y  $ 22.500   91.806-308 B-102
 SOH=    67  SOO=     0  RES=    0 :                $ 113    $ 459

 10055  MP987    2-PART INVOI P A2 :     18  Y  $ 29.950   91.643-206 B-106
 SOH=    49  SOO=     0  RES=    0 :                $ 539   $ 1650

 10069  MPH89-0  DUALVUE ENVE B A4 :      2  N  $ 125.000   20.800  83 B-103
 SOH=   125  SOO=     0  RES=    0 :                $ 250     $ 42

 10074  10074    TYPING STAND B A6 :     10  Y  $ 115.000   59.901  48 B-104
 SOH=    22  SOO=     0  RES=    0 :                $ 1150   $ 599
 ----------------------------------------------------------------------------------
   6 TRANSACTIONS ENTERED   TOTALS :                $ 3931   $ 2861   27

 END OF REPORT
```

Report Title:	**Stock Orders**
Purpose:	Provides a detailed audit trail of all **Order** transactions
How:	**Ø1 Enter I/M Transactions,** 3 Stock Orders
When:	Generated automatically
Key Data:	Shows stock position of the part before vendor order; shows quantity ordered and costs at **Average** cost on the file or a specific cost entered for this order

```
                    ABC ASSOCIATES INC.                          PAGE 1
                        STOCK ORDERS
                      05/25/84 GEN 4
 ==================================================================

 P/N    STK NUMB DESCRIPTION UM VC : QTY ORD   $ COST  VEND #      REFERENCE

 10017  TP-4356  51/4 DISKETT B A1 :     25   85.000  166659        A-112
 SOH=  1347  SOO=   175  RES=    0 :  $ 2125

 10021  RJ24     2-PART STATE P A3 :     50  140.000  434312        A-114
 SOH=   503  SOO=   235  RES=    0 :  $ 7000

 ------------------------------------------------------------------
  2  TRANSACTIONS ENTERED   TOTALS :  $ 9125

 END OF REPORT
```

Report Title:	**Stock Adjustments**
Purpose:	Provides a detailed audit trail of all **Adjustment** transactions
How:	**01 Enter I/M Transactions**
When:	Generated automatically
Key Data:	Shows stock position of the part before the adjustment; shows quantity adjustment and costs at **Average** cost on the file

```
                    ABC ASSOCIATES INC.                          PAGE 1
                     STOCK ADJUSTMENTS
                      05/25/84 GEN 4
=================================================================================
P/N    STK NUMB DESCRIPTION UM VC : SOH ADJ SOO ADJ RES ADJ              REFERENCE

10017  TF-4356  51/4 DISKETT B A1 :      5       0       0               C1
SOH=  1347  SOO=   200  RES=    0 :   $ 18    $ 0     $ 0

10021  RJ24     2-PART STATE P A3 :     10       0       0               C2
SOH=   503  SOO=   285  RES=    0 :  $ 162    $ 0     $ 0
---------------------------------------------------------------------------------
 2  TRANSACTIONS ENTERED   TOTALS :  $ 180    $ 0     $ 0

END OF REPORT
```

Report Title: **Inventory Summary**

Purpose: This is the most important report in the system. It provides the Inventory Control manager with key information about the entire inventory file or any sub-set of inventory

How: **Ø3 Print Reports, 8** Inventory Summary

When: Automatically generated when other reports are requested, or printed when required

Options: Use **Select** Function to extract report for any sub-set of the Inventory File. Report heading shows which **Select** Function was used.

Key Data: Presents an overview of the entire inventory picture, including: stock-on-hand valued at average cost and retail (price 1); displays **Optimum SOH** (based on a theoretical inventory of Safety Stock + 1/2 EOQ); total daily usage (at cost); total inventory turns; etc. Provides a breakdown by Part Classes A, B, and C

```
                    ABC ASSOCIATES INC.
                     INVENTORY SUMMARY
                    ALL ITEMS SELECTED
                      05/25/84 GEN 4
==================================================================================

 TOTAL $ SOH (COST)    =    $ 15165    TOTAL NO OF ITEMS     =    6    100%
 TOTAL $ SOH (RETAIL)  =    $ 23735    TOTAL ITEMS ON-HAND   =    6    100%
 OPTIMUM $ SOH (COST)  =     $ 6661    TOTAL ITEMS SHORT     =    0      0%

 TOTAL $ SOO (COST)    =     $ 4050    TOTAL ITEMS ON-ORDER  =    3     50%
 TOTAL $ RES (COST)    =       $ 0     TOTAL ITEMS RESERVED  =    0      0%
 TOTAL $ DAILY USAGE   =       $ 170   TOTAL INVENTORY TURNS=   2.811

 TOT $ ISS-MO (COST)   =    $ 21575    TOT $ ISS-YR (COST)   =    $ 212250
 TOT $ ISS-MO (RETAIL) =    $ 31225    TOT $ ISS-YR (RETAIL) =    $ 319725

                  ****** INVENTORY STRATIFICATION ******

 CLASSIFICATION            ITEMS                 $SOH      % DAILY USE      %

   'A' (=> $  50/DAY)        2     33        $ 7800    51     $ 100    59

   'B' (=> $  10/DAY)        3     50        $ 6115    40     $ 70     41

   'C' (=> $   0/DAY)        1     17        $ 1250     8     $ 1       0

 END OF REPORT
```

Report Title:	**Stock Status Report**
Purpose:	Provides a detailed listing of the current stock position for each part
How:	**03 Print Reports, 1** Stock Status Report
When:	Printed when required
Options:	Use **Select** Function to extract report for any sub-set of the Inventory File. Report heading shows what **Select** Function was used.
Key Data:	Shows average unit cost and extended Stock-on-Hand value

ABC ASSOCIATES INC. PAGE 1
STOCK STATUS REPORT
ALL ITEMS SELECTED
05/25/84 GEN 4

P/N	STK NUMB	DESCRIPTION	UM	VC	S-O-H	S-O-O	RES	AV COST	$SOH VAL
10017	TF-4356	5 1/4 DISKET	B	A1	1330	100	0	3.000	3990
10021	RJ24	2-PART STAT	P	A3	500	250	0	14.000	7000
10036	MP1223	ACCT PAY CH	P	A5	25	25	0	10.000	250
10055	MP987	2-PART INVO	P	A2	25	0	0	75.000	1875
10069	MPH89-0	DUALVUE ENV	B	A4	100	0	0	8.000	800
10074	10074	TYPING STAN	E	A6	5	0	0	250.000	1250

6 RECORDS PROCESSED

END OF REPORT

Report Title:	**Sales Analysis Report**
Purpose:	Provides a detailed listing of all sales made in the current monthly period (i.e., when Monthly Issues are > 0)
How:	**03 Print Reports,** 2 Sales Analysis Report
When:	Print at month-end before running **2 Initialize Parameters**
Options:	Use **Select** Function to extract report for any sub-set of the Inventory File. Report heading shows what **Select** Function was used.
Key Data:	Shows inventory value (cost) and retail value (price 1) of merchandise picked; shows gross profit margin

ABC ASSOCIATES INC. PAGE 1
SALES ANALYSIS REPORT
ALL ITEMS SELECTED
05/25/84 GEN 4

P/N	STK NUMB	DESCRIPTION	UM	VC	MO-IS	$INV VAL	$RET VAL	YR-IS	$RET VAL	GP%
10017	TP-4356	5 1/4 DISKET	B	A1	1050	3150	4725	12050	54225	33
10021	RJ24	2-PART STAT	P	A3	500	7000	12500	6000	150000	44
10036	MP1223	ACCT PAY CH	P	A5	125	1250	3125	1500	37500	60
10055	MP987	2-PART INVO	P	A2	75	5625	1875	600	15000	-200
10069	MPH89-0	DUALVUE ENV	B	A4	100	800	1500	1200	18000	47
10074	10074	TYPING STAN	E	A6	15	3750	7500	90	45000	50

6 RECORDS PROCESSED

END OF REPORT

Report Title:	**Price Catalog**
Purpose:	Provides a price catalog of stock items selected
How:	**03 Print Reports**, 3 Price Catalog
When:	When required
Options:	Use **Select** Function to extract report for any sub-set of the Inventory File. Report heading shows what **Select** Function was used.
Key Data:	Shows price breaks by quantity range and unit of measure; if additional discount is available, it shows discount %

ABC ASSOCIATES INC. PAGE 1
PRICE CATALOG
ALL ITEMS SELECTED
05/25/84 GEN 4

P/N	STK NUMB	DESCRIPTION	VC	QTY BREAK	UNIT PRICE	DISC%	UNIT/MEASURE
10017	TF-4356	5 1/4 DISKETTES	A1	1- 4	4.500	10	BOX
				5- 19	4.000		
				20- UP	3.750		
10021	RJ24	2-PART STATEMENT	A3	1- 0	25.000	02	PACKAGE
				1- 9	22.500		
				10- UP	21.500		
10036	MP1223	ACCT PAY CHECK	A5	1- 0	25.000	02	PACKAGE
				1- 9	22.500		
				10- UP	21.000		
10055	MP987	2-PART INVOICE	A2	1- 0	25.000	02	PACKAGE
				1- 9	22.500		
				10- UP	21.000		
10069	MPH89-0	DUALVUE ENVELOPE	A4	1- 0	15.000	05	BOX
				1- 19	12.500		
				20- UP	12.000		
10074	10074	TYPING STAND	A6	1- 0	500.000	05	EACH
				1- 49	475.000		
				50- UP	450.000		

6 RECORDS PROCESSED

END OF REPORT

Report Title:	**Shortage Report**
Purpose:	Provides a detailed listing of all stock items selected in a shortage (backorder) condition (i.e., RES is > SOH)
How:	**03 Print Reports**, **4** Shortage Report
When:	Suggested frequency is weekly
Options:	Use **Select** Function to extract report for any sub-set of the Inventory File. Report heading shows what **Select** Function was used.
Key Data:	Shows current Available Balance (SOH + SOH - RES); number of units Short; number of days supply short (based upon Daily Usage)

```
                    ABC ASSOCIATES INC.                          PAGE 1
                      SHORTAGE REPORT
                    ALL ITEMS SELECTED
                      05/25/84 GEN 4
==================================================================================

 P/N     STK NUMB DESCRIPTION UM VC  S-O-H S-O-O   RES AVAIL R-O-L  SHORT DAYS SUP

 10069   MPH89-0  DUALVUE ENV  B A4    100     0   125   -25    50     25     4.000
 10074   10074    TYPING STAN  E A6      5     0    10    -5     3      5  2500.000

  6  RECORDS PROCESSED

 END OF REPORT
```

Report Title:	**Re-Order Report**
Purpose:	Provides a detailed listing of all stock items selected in a potential re-order condition (i.e., AVAIL is < ROL)
How:	**Ø3 Print Reports**, 5 Re-Order Report
When:	Suggested frequency is weekly. At month-end, run after **2 Initialize Parameters** to utilize the latest Daily usage, re-initialized ROL, and re-initialized EOQ.
Options:	Use **Select** Function to extract report for any sub-set of the Inventory File. Report heading shows what **Select** Function was used.
Key Data:	Shows current Available Balance (SOH + SOO - RES); recommended Order Quantity (EOQ); days supply of the order (based upon Daily Usage)

```
                          ABC ASSOCIATES INC.                          PAGE 1
                            RE-ORDER REPORT
                          ALL ITEMS SELECTED
                            05/25/84 GEN 4
=================================================================================

P/N    STK NUMB DESCRIPTION UM VC  S-O-H S-O-O   RES AVAIL R-O-L  E-O-Q DAYS SUP

10036  MP1223   ACCT PAY CH  P A5     25    25     0    50    75     25    25.000
10055  MP987    2-PART INVO  P A2     25     0     0    25   100    100   250.000

 6  RECORDS PROCESSED

END OF REPORT
```

Report Title:	**Physical Inventory Report**
Purpose:	Provides a detailed listing of all stock items selected for verifying inventory counts
How:	**03 Print Reports, 7** Physical Inventory Report
When:	Suggested frequency is quarterly
Options:	Use **Select** Function to extract report for any sub-set of the Inventory File. Report heading shows what **Select** Function was used.
Key Data:	Shows current Stock-on-Hand and Unit-of-Measure; provides a turn-around document for making stock-on-hand adjustments

```
                    ABC ASSOCIATES INC.                          PAGE 1
                 PHYSICAL INVENTORY REPORT
                   ALL ITEMS SELECTED
                     05/25/84 GEN 4
 ==================================================================

 P/N     STK NUMB DESCRIPTION UM VC LOC REC SOH  ACT SOH

 10017   TF-4356  51/4 DISKET  B A1   1    1330  ........  BOX
 10021   RJ24     2-PART STAT  P A3   C     500  ........  PACKAGE
 10036   MP1223   ACCT PAY CH  P A5   E      25  ........  PACKAGE
 10055   MP987    2-PART INVO  P A2   B      25  ........  PACKAGE
 10069   MPH89-0  DUALVUE ENV  B A4   D     100  ........  BOX
 10074   10074    TYPING STAN  E A6   P       5  ........  EACH

  6  RECORDS PROCESSED

 END OF REPORT
```

Report Title:	**Inventory Balances**
Purpose:	Provides a detailed listing of all stock item balances
How:	**04 Maintain/Display Inventory Items, 03** Reports, 1 Balances
When:	Printed when required
Options:	No Options
Key Data:	Shows all quantity fields in the Inventory File; provides a verification document for current inventory status

ABC ASSOCIATES INC. PAGE 1
INVENTORY BALANCES
05/25/84 GEN 4

P/N	STK NUMB	DESCRIPTION	UM	S-O-H	S-O-O	RES	R-O-L	E-O-Q	M-IS	YR-IS	$D-USAGE
10017	TF-4356	5 1/4 DISKETT	B	1330	100	0	500	30	1050	12050	30.000
10021	RJ24	2-PART STATE	P	500	250	0	500	250	500	6000	50.000
10036	MP1223	ACCT PAY CHE	P	25	25	0	75	25	125	1500	10.000
10055	MP987	2-PART INVOI	P	25	0	0	100	100	75	600	30.000
10069	MPH89-0	DUALVUE ENVE	B	100	0	0	50	100	100	1200	50.000
10074	10074	TYPING STAND	E	5	0	0	3	2	15	90	0.500

6 RECORDS ON FILE

END OF REPORT

Report Title:	**Inventory List**
Purpose:	Provides a detailed listing of all stock item dollars
How:	**04 Maintain/Display Inventory Items, 03** Reports, **2** List
When:	Printed when required
Options:	No Options
Key Data:	Shows all dollar fields in the Inventory File; provides a verification document for current inventory status

```
                          ABC ASSOCIATES INC.                          PAGE 1
                             INVENTORY LIST
                           05/25/84  GEN 4
=================================================================================

P/N     STK NUMB DESCRIPTION UM VC LT B PB/D  PRICE 1  PRICE 2  PRICE 3  AV COST

10017   TF-4356  51/4 DISKETT B A1 10 1 5D10    4.500    4.000    3.750    3.000
10021   RJ24     2-PART STATE P A3  7 C 1A02   25.000   22.500   21.500   14.000
10036   MF1223   ACCT PAY CHE P A5  7 E 1A02   25.000   22.500   21.000   10.000
10055   MP987    2-PART INVOI P A2  7 B 1A02   25.000   22.500   21.000   75.000
10069   MPH89-0  DUALVUE ENVE B A4  3 D 1D05   15.000   12.500   12.000    8.000
10074   10074    TYPING STAND E A6 10 F 1I05  500.000  475.000  450.000  250.000

 6  RECORDS ON FILE

END OF REPORT
```

Report Title:	**Part Numbers**
Purpose:	Provides a listing of valid part numbers
How:	**04 Maintain/Display Inventory Items, 03** Reports, 3 Part Numbers
When:	Printed when required
Options:	No options
Key Data:	Starts with the part number seed (defined in the I/M Information File) and adds a calculated check-digit

ABC ASSOCIATES INC. PAGE 1
PART NUMBERS
05/25/84 GEN 4

10017	10021	10036	10040
10055	10069	10074	10088
10093	10106	10111	10125
10130	10144	10159	10163
10178	10182	10197	10209
10214	10228	10233	10247
10252	10266	10271	10285
10290	10303	10318	10322
10337	10341	10356	10360
10375	10389	10394	10406
10411	10425	10430	10444
10459	10463	10478	10482
10497	10509		

Report Title:	**I/M Information File**
Purpose:	Provides a listing of the General Information File
How:	**05 I/M Information File, 99 Print**
When:	Printed any time parameters are changed, except for date
Key Data:	Prints all fields in the file

```
                    ABC ASSOCIATES INC.                    PAGE 1
                  I/M INFORMATION FILE
                        05/25/84
=================================================================

                  COMPANY: ABC ASSOCIATES INC.

                  SYSTEM DATE : 05/25/84

                  PASSWORD : PASS

                  DATA DRIVES  : 1

                  DR1-P/N START: 1001

                  DR1-P/N END  : 1050

                  INV ACCT     : 14110.0

                  INV ADJ ACCT : 14130.0

                  SALES ACCT   : 31190.0

                  CLASS A $CUT : 50.000

                  CLASS B $CUT : 10.000

                  MIN EOQ DAYS : 5

                  SAFETY STK DY: 2

                  HOLDING $ CST: 20

                  ORDER COST   : 15

END OF REPORT
```

Report Title: **File Maintenance Coding Sheet**

Purpose: Provides an input coding form for converting inventory to the computerized system

How: Use for **Adding** new parts to the system

When: When adding new parts to the system

Key Data: Contains all fields in the Inventory Master File

INVENTORY MASTER FILE

FILE MAINTENANCE CODING SHEET

DATA ELEMENT	DESCRIPTION	INPUT CODE
1 PART NUMBER	NUMERIC PART NUMBER WITH CHECK-DIGIT	_____
2 STOCK NUMBER	VENDOR STOCK NUMBER (ALPHA/NUMERIC)	_____
3 DESCRIPTION	BRIEF DESCRIPTION OF PART	_____
4 UNIT OF MEASURE	A CARTON L LBS B BOX P PACKAGE C CASE R REAM D DOZEN S GROSS E EACH T TON G GALLON X OTHER	_
5 VEND/COMM CODE	(LOCAL USE)	__
6 LEADTIME (DAYS)	TIME FROM ORDER TO RECEIPTS	___
7 BIN LOCATION	(LOCAL USE)	_
8 PRICE BREAK CODES/ DISCOUNT CODE	CODE UP TO 2 PRICE BREAK CODES WHICH CORRESPOND TO PRICE 2 AND PRICE 3	__ __
	1 1 A 10 I 30 Q 132 2 2 B 11 J 60 R 144 3 3 C 12 K 72 S 200 4 4 D 20 L 84 T 500 5 5 E 24 M 96 U 1000 6 6 F 30 N 100 V 2000 7 7 G 36 O 108 W 3000 8 8 H 48 P 120 X 4000 9 9 Y 5000 Z 10000	DISCOUNT CODE 01 1% 02 2% ... 99 99%
9 PRICE 1	UNIT PRICE (RETAIL)	_____
10 PRICE 2	PRICE AFTER FIRST PRICE BREAK CODE	_____
11 PRICE 3	PRICE AFTER 2ND PRICE BREAK CODE	_____
12 AVG UNIT COST	AVERAGE UNIT COST OF INVENTORY	_____
13 DAILY AVG USAGE	DOLLAR DAILY USAGE OF PART	_____
14 STOCK-ON-HAND		_____
15 STOCK-ON-ORDER		_____
16 RESERVATIONS	(CUSTOMER BACK-ORDERS)	_____
17 RE-ORDER LEVEL	SPECIFY OR LEAVE BLANK	_____
18 ECONOMIC ORDER QTY	SPECIFY OR LEAVE BLANK	_____
19 MONTHLY ISSUES	(SYSTEM MAINTAINS THIS FIELD)	_____
20 Y-T-D ISSUES	(SYSTEM MAINTAINS THIS FIELD)	_____

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VII. TROUBLESHOOTING GUIDE

Most of the diagnostic error messages that appear on the screen are edit messages and provide the operator with a warning that there is an error condition present. These errors are self-correcting since they lock out an incorrect function or command. It is possible for an unexpected error to occur from which the system may not be able to recover.

The following pages contain a list of posssible errors, probable causes and appropriate actions. They should be used as a reference guide in the event an error occurs.

ERROR MESSAGE	PROBABLE CAUSE	CORRECTIVE ACTION
Check that Disk is in Unit 9	Configurator File set for 2 single disk drives; first drive is Unit 8, second is Unit 9. System is looking for disk in Unit 9.	Make sure disk is inserted in Unit 9 Make certain that Disk Unit 9 was not turned off--the reason is when it is turned back on, it will default to Unit 8 again. You will have to use **6 Configuration File Maintenance** to change the Unit Number back to 9
Can't Read Disk	Disk is not inserted in drive Drive door is not closed Disk has not been formatted "NEWed" therefore the system can't read it	Correctly seat disk in drive and close drive door Insert formatted disk in drive If you don't have a formatted disk, turn off system, then insert a new high quality disk and follow directions in Section IV-D
Remove Write Protect on Disk	Each disk has adhesive tabs that may be placed over the notch -- to prevent writing	Remove the write-protect tab from your disk since the system must write on the disk If there is no tab and you still get this error... you may have a hardware problem with your disk drive. Call your dealer.

ERROR MESSAGE	PROBABLE CAUSE	CORRECTIVE ACTION
Bad Configuration Data...See Manual	The configuration file is not present or contains an invalid configuration of hardware	The system will automatically execute Configuration File Maintenance to allow you to create and/or correct the file
Security Violated... See Manual	A program was executed on your disk directly, instead of booting up through the Main Menu	Turn off system, then turn on, place side 1 of program disk in drive 0 and enter: load"*",8 <RETURN>, run <RETURN>
	A copy of the original program disk was made--causing security to be violated	The program disk **CANNOT BE COPIED!** Attempting to copy the disk may cause damage to the Original. **YOU MUST ORDER SECURITY BACKUP COPIES DIRECTLY FROM COMMODORE**
Disk Error #	Tampering with the security on the system may cause the error	Pull out disk(s), Re-Start system
System hesitates	Normal	Do nothing -- wait
System hangs	If, after a prolonged wait, the system totally hangs	Pull out disk(s) Re-start system
File data error in XXXXX	This error caused by a bad record with alpha data in a numeric field	Pull out disk(s) Re-start system. If same error occurs, re-start using a back-up disk
Screen displays READY	Program came to an irrecoverable problem	Hit <SHIFT><CLR/HOME> together, then enter run<RETURN>
		If same error occurs, pull out disk(s) and re-start system

ERROR MESSAGE	PROBABLE CAUSE	CORRECTIVE ACTION
I/M Menu Not Found	Either you have the wrong disk or a bad disk	Re-insert I/M Program disk with Red Label up (Side 1) If above doesn't work then the program i/c000 is missing from your disk...use your Security Copy to run your system
No Part on File	Before you can post, you must use Inventory File Maintenance to Add at least one part number to the system	Select **4 Maintain Display Inventory Items** to Add part numbers
Disk Err# xx	Whenever a disk error occurs the system will print the error number and brief description	See your Floppy Disk User's Manual for list of error codes (Page 43 of VIC-1541 Manual)
Invalid Password	Password must be 4 characters	Input 4 character password
	System detected a password that was not 4 Characters	If this error occurs in a Program other than the Main Menu, then you may have a hardware problem, or you may have a tape cassette connected to your system. Disconnect the tape unit, and re-start the system.

ERROR MESSAGE	PROBABLE CAUSE	CORRECTIVE ACTION
No General Info File on System	The system requires a General Information File which contains the Company Name, password, and part number parameters This file: i/c gif is not on the Data Disk	Exit back to Main Menu, select 5 General Information File to create a GIF on the data disk
Wrong Password for this disk	Each disk may be assigned its own password for security of data	Check the password you entered when you first turned on your system to be sure it is the password for this disk. In the event that you changed a password on a data disk and don't recall what it is, follow these steps to re-create the General Information File on the data disk: Scratch file i/c gif as follows: Place Data disk in drive 0 Enter open 15,8,15,"s0:i/c gif" <RETURN> Now turn off system, turn system back on, load the system, select 5 General Information File to re-create a new GIF on the data disk.

SUMMARY OF CBM FLOPPY DISK ERROR MESSAGES

0	OK, no error exists.
1	Files scratched response. Not an error condition.
2-19	Unused error messages: should be ignored.
20	Block header not found on disk.
21	Sync character not found.
22	Data block not present.
23	Checksum error in data.
24	Byte decoding error.
25	Write-verify error.
26	Attempt to write with write protect on.
27	Checksum error in header.
28	Data extends into next block.
29	Disk id mismatch.
30	General syntax error.
31	Invalid command
32	Long line.
33	Invalid filename.
34	No file given.
39	Command file not found.
50	Record not present.
51	Overflow in record.
52	File too large.
60	File open for write.
61	File not open.
62	File not found.
63	File exists.
64	File type mismatch.
65	No block.
66	Illegal track or sector.
67	Illegal system track or sector.
70	No channels available.
71	Directory error.
72	Disk full or directory full.
73	Power up message, or write attempt with DOS mismatch.
74	Drive not ready.

TELEPHONE SUPPORT SERVICE

As a subscriber of our Telephone Support Service Plan, you can call the Commodore BAS Support Center at (313) 334-9882, anytime during regular business hours about any questions or assistance you may need for your software.

We have had four years of experience supporting over 100,000 users of our software. Our team of Customer Support Representatives are ready to serve you. We can effectively handle questions relating to software functions and procedures, as well as many hardware and interfacing questions.

When you register your software over the telephone, you will receive a support ID number, which you will want to record in your manual to use whenever you call for support.

Telephone Support Subscription Fee Price Schedule

$25.00 provides one hour of technical assistance for each software module for up to six months.

Enrollment can be initiated by your call with a Visa, MasterCard or American Express Card. If you want to subscribe with a check, please make your check payable to **"IDI - Customer Service"**, or just call us for the necessary information.

Use the Customer Support return card, found in your binder.

USING TELEPHONE CONSULTING ASSISTANCE

Before you call - check the following:

[ ] Review the operator's manual first

- Look at Section II - System Functions
- Look at the Troubleshooting section

[ ] If you have a problem, try to re-create the problem and document your procedures to enable you to fully describe the problem

[ ] Before you call, please have the following information available:

- Your name and phone number
- Your subscription number or charge card
- Your hardware (e.g. Commodore PLUS/4 with 1541 drive and 1526 printer)
- Your software module (e.g. Accounts Receivable/Billing)
- Brief description of your problem (eg: Not able to access customer records)

To save you time and money, provide this information immediately to your Customer Support Representative, as soon as requested.

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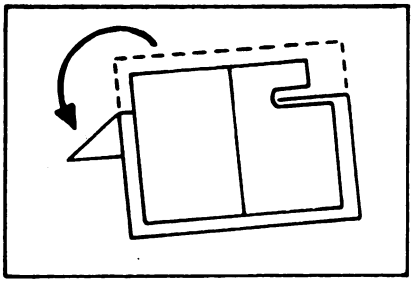
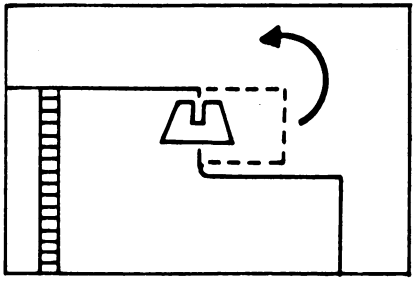
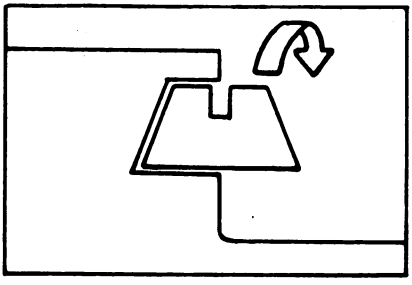
Directions for your easel binder set-up.



1. Fold upper panel on binder downward.



2. Fold support tab back.



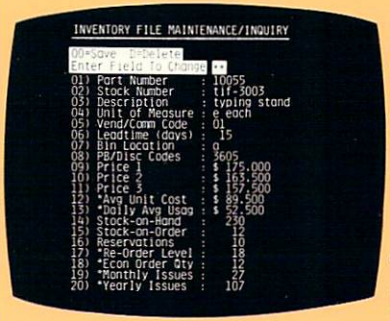
3. Fold locking tab down to engage with support tab.

INVENTORY MANAGEMENT

A comprehensive system that maintains perpetual inventory records for 1,800 inventory items per disk, provides for automated stock ordering, and produces a series of management reports including an inventory summary.

Features

- Maintains records for all stock items
- Processes stock receipts, issues, orders, and adjustments with full audit trail
- Selectively calculates re-order level and economic order quantity by inventory category
- Assists in stock ordering by generating shortage and re-order reports



The system keeps track of stock ordering information including; vendor product code, ordering leadtime, stock location, up to 3 retail prices, price-break codes, unit cost, stock-on-hand, stock-on-order, and re-order level.

Key Reports

- Stock Status
- Recommended Re-Order Report
- Shortage Report
- Inventory Summary

Capacity

Inventory Items per Disk	1800
Maximum price per item	$9,999.99
Maximum quantity per item	9,999,999
Maximum value of inventory	$99,999,999.99
Part Number (digits)	5

Technical Information: Requires Commodore Plus/4, Commodore disk drive and printer.

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